U.S. DEPARTMENT OF ENERGY

OFFICE OF SCIENCE

DOE/SC Status Review

of the

Proton Improvement Plan (PIP-II)

Fermi National Accelerator Laboratory

November 15-16, 2016

Kurt Fisher

Committee Chair

Office of Science, U.S. Department of Energy

http://www.science.doe.gov/opa/

Deliverables – Due Dates

- **Closeout report (prepared in PowerPoint)**
  - Presented Wednesday, November 16
  - Instructions—slide 12
  - Template—slide 14
- **Final report draft (prepared in MS Word)**
  - Due Monday, November 21 to Casey (casey.clark@science.doe.gov)
  - Instructions—slide 13

DOE EXECUTIVE SESSION AGENDA

Tuesday, November 15, 2016—Wilson Hall, the Comitium

8:00 a.m.	DOE Executive Session	K. Fisher
8:10 a.m.	Program Perspective	S. Peggs
8:20 a.m.	Federal Project Director Perspective	P. Carolan
8:25 a.m.	Questions	
8:30 a.m.	Adjourn	

Project and review information is available at:

https://web.fnal.gov/organization/OPSS/Projects/PIPII/_layouts/15/start.aspx#/SitePages/DOE%20Independent%20Project%20Review%20of%20PIP%20II%2C%20November%2015-16%2C%202016.aspx

Review Committee Participants

Kurt Fisher, DOE/SC, Chairperson

Review Committee

SC 1—Technical
*Mike Harrison, BNL
Chris Adolphsen, SLAC
Mike Blaskiewicz, BNL
Matt Howell, ORNL

SC 2—Cost and Schedule
*Jennifer Fortner, ANL
Jerry Gao, DOE/ASO
Ethan Merrill, DOE/OPA

SC 3—Management and ES&H
*Jim Kerby, ANL
Jeff Sims, SLAC
Matti Tiirakari, CERN

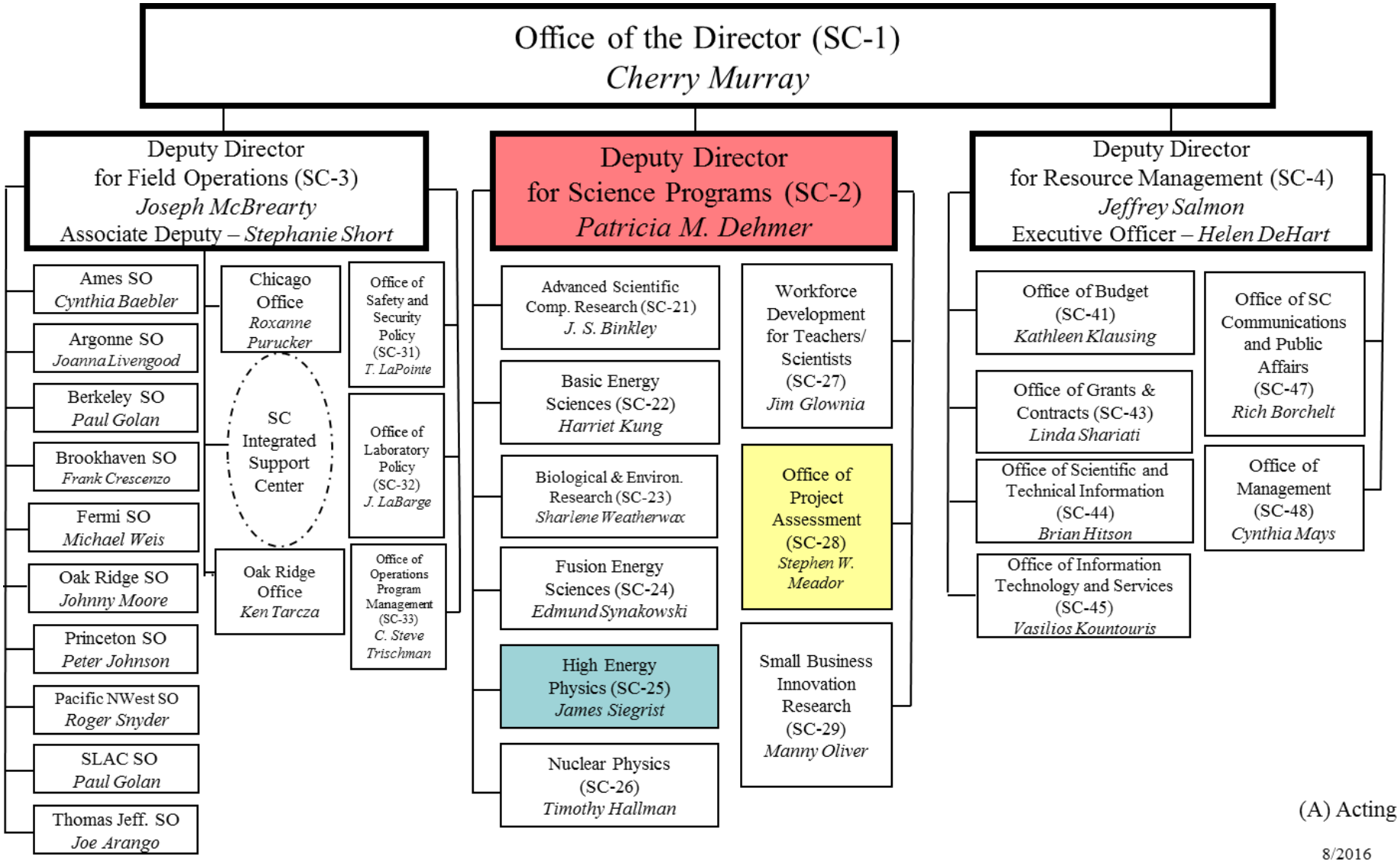
*Lead

Observers
Mike Procario, DOE/SC
Steve Peggs, DOE/SC
Adam Bihary, DOE/FSO
Pepin Carolan, DOE/FSO
Michael Weis, DOE/FSO
Ranajit Kumar, DAE, India
Ivan Graff, DOE/PM

U.S. DEPARTMENT OF ENERGY

SC Organization

OFFICE OF SCIENCE



(A) Acting

8/2016

Charge Questions

1. Technical Design: Is the conceptual design for the PIP-II linac sound and likely to meet the specified technical performance requirements? Are R&D efforts being effectively managed to maximize benefits and minimize technical risks to the project?

2. Scope: Is the project's scope sufficiently well-defined to support the preliminary cost and schedule estimates?

3. Cost and Schedule: Are the cost and schedule estimates sufficiently well-defined and of adequate maturity to support the forecasted critical decision milestones and cost range?

4. Management: Is the project being properly managed at this stage? Does the management team possess the skills, expertise, and experience necessary to successfully execute the project? Are plans to identify and allocate staffing and resources consistent with current funding guidance?

5. Environment, Safety, and Health: Is environment, safety, and health being properly addressed given the project's current stage of development?

6. India Institutions and Fermilab Collaboration (IIFC): Is the collaboration proceeding satisfactorily towards meeting the goals outlined in the Joint R&D document? Will the deliverables outlined in the Joint R&D document position India for a successful contribution to the PIP-II construction phase?

Agenda

Tuesday, November 15, 2016—Wilson Hall, the Comitium

8:00 am	DOE Full Committee Executive Session	K. Fisher
8:30 am	Welcome and Laboratory Strategy	N. Lockyer
8:40 am	DAE Strategy	S.C. Joshi/S. Krishnagopal
9:00 am	PIP-II Goals, Status and Strategy	S. Holmes
9:25 am	PIP-II Conceptual Design	V. Lebedev
9:50 am	PIP-II R&D Program	P. Derwent
10:10 am	Break	
10:25 am	International Collaborations	S. Mishra
10:45 am	Conventional Facilities	S. Dixon
11:05 am	Resource Loaded Schedule	L. Lari
11:30 am	ES&H	V. Kuchler
11:50 am	Engineering Organization	D. Mitchell
12:05 pm	Discussion	
12:15 pm	Lunch	

Agenda (cont'd)

	Breakout Session - R&D Program
1:15 pm	Warm Front End and PIP-II IT Status ..... A. Shemyakin
1:40 pm	HWR Status ..... Z. Conway
2:00 pm	SSRI Status ..... D. Passarelli
2:20 pm	SSR2 Status ..... S. Krishnagopal
2:40 pm	LB650 Status ..... T. Nicol
3:00 pm	HB650 Status ..... V. Jain
3:20 pm	Break
3:35 pm	Resonance Control of Cavities ..... W. Schappert
3:55 pm	RF Sources ..... D. Peterson
4:15 pm	RF Controls ..... B. Chase
4:35 pm	Booster/Recycler/Main Injector ..... TBD
4:50 pm	Discussion
	Breakout Session - Management
3:35 pm	Current Cost Estimate ..... C. Jacobsen
3:55 pm	Plan to CD-1 ..... P. Derwent
4:15 pm	PIP-II Perspective on IIFC ..... S. Holmes
4:35 pm	Organization and Management Plan; Wrap-up ..... S. Holmes
4:50 pm	Discussion
5:00 pm	DOE Full Committee Executive Session ..... K. Fisher
6:30 pm	Adjourn

Agenda (cont'd)

Wednesday, November 16, 2016

8:00 am	Executive Session	K. Fisher
9:00 am	PIP-II Response to Questions	
9:30 am	Full Committee Executive Session/Working Session	Committee
12:00 pm	Committee Working Lunch	
1:00 pm	Full Committee Executive Session/Dry Run	Committee
3:00 pm	Closeout	
4:00 pm	Adjourn	

Report Outline/Writing Assignments

Executive Summary/2-page Summary Report.....Fisher

1. Introduction.....Peggs
2. Technical (Charge Question 1, 2, 6) ..... Harrison*/Subcommittee 1
   - 2.1 Findings
   - 2.2 Comments
   - 2.3 Recommendations
3. Cost and Schedule (Charge Question 2, 3) .....Fortner*/Subcommittee 2
4. Management (Charge Questions 4, 5, 6) ..... Kerby*/Subcommittee 3

*Lead

Closeout Presentation

and Final Report

Procedures

Format: Closeout Presentation

(Use PowerPoint / No Smaller than 18 pt Font)

2.1 Use Section Number/Title corresponding to writing assignment list.

List Review Subcommittee Members

List Assigned Charge Questions and Review Committee Answers

2.1.1 Findings – What the project told us

- In bullet form, include your account of factual technical, cost, schedule, and management. Information provided/presented by the Project

2.1.2 Comments – What we think about what the project told us

- In bullet form, include your assessment of project status (observations, concerns, feedback, suggestions, etc.) based on the findings. This section carries more emphasis than the Findings, but does not require an action as do the Recommendations. Do not number your comments.

2.1.3 Recommendations – What we think the project needs to do

1. Beginning with an action verb, provide a brief, concise, and clear statement with a due date.

For Critical Decision reviews, include a specific recommendation addressing how the Committee judged the readiness for the CD, *i.e.*:

- **The project is ready to proceed to CD-2; *or***
- **The project is ready to proceed to CD-2, after addressing the following recommendations**

Format: Final Report

(Use MS Word / 12pt Font)

2.1 Use Section Number/Title corresponding to writing assignment list.

2.1.1 Findings – What the project told us

Include a brief narrative description of technical, cost, schedule, management information provided by the project. Each subcommittee will emphasize their area of responsibility.

Cost and schedule subcommittee should provide attachments for approved project cost breakdown and schedule. Management subcommittee should provide attachment for approved project organization and names of personnel.

2.1.2 Comments – What we think about what the project told us

Descriptive material assessing the findings and making observations and conclusions based on the findings. **The committee's answer to the charge questions should be contained within the text of the Comments Section.** Do not number your comments.

2.1.3 Recommendations – What we think the project needs to do

1. Beginning with an action verb, provide a brief, concise, and clear statement with a due date.

2.

Please Note: Recommendations are approved by the full committee and presented at the review closeout briefing. Recommendations SHOULD NOT be changed or altered from the closeout report to the Final Report.

Closeout Report on the DOE/SC Status Review of the

Proton Improvement Plan (PIP-II)

Fermi National Accelerator Laboratory

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Committee Chair

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2. Technical

M. Harrison, BNL / Subcommittee 1

1. Technical Design: Is the conceptual design for the PIP-II linac sound and likely to meet the specified technical performance requirements? Are R&D efforts being effectively managed to maximize benefits and minimize technical risks to the project?

2. Scope: Is the project's scope sufficiently well-defined to support the preliminary cost and schedule estimates?

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- **Findings**
- **Comments**
- **Recommendations**

2. Scope: Is the project's scope sufficiently well-defined to support the preliminary cost and schedule estimates?

3. Cost and Schedule: Are the cost and schedule estimates sufficiently well-defined and of adequate maturity to support the forecasted critical decision milestones and cost range?

- **Findings**
- **Comments**
- **Recommendations**

PROJECT STATUS		
Project Type	MIE / Line Item / Cooperative Agreement	
CD-1	Planned:	Actual:
CD-2	Planned:	Actual:
CD-3	Planned:	Actual:
CD-4	Planned:	Actual:
TPC Percent Complete	Planned: _____%	Actual: _____%
TPC Cost to Date		
TPC Committed to Date		
TPC		
TEC		
Contingency Cost (w/Mgmt Reserve)	$	_____% to go
Contingency Schedule on CD-4b	_____months	_____%
CPI Cumulative		
SPI Cumulative		

4. Management: Is the project being properly managed at this stage? Does the management team possess the skills, expertise, and experience necessary to successfully execute the project? Are plans to identify and allocate staffing and resources consistent with current funding guidance?

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- **Findings**
- **Comments**
- **Recommendations**